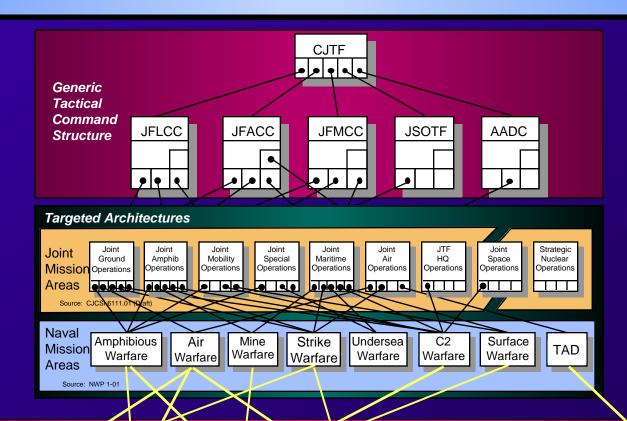
## Navy Architecture Products

People Analysis **Products** Operational activity descriptions **ACTIVITY FLOW** Operational data flow description Operational standards (e.g., data Node connectivity and information **INTER-NODE INFO** exchange requirements Normalized operational architectures Functional/nodal data flow Systems functions and allocation **FUNCTIONAL FLOW Activity descriptions by node** Systems element block diagrams **Systems interface definitions PLATFORMS Systems performance objectives Systems standards list** DoN and TAFIM standards list Standards profiles **SYSTEMS Emerging tech'y/stds advisories** D<sub>15</sub> Standards requirements Standards deficiencies lists

**Data element descriptions** 

## Navy/STS Architectural Relationships



### JCS STS III Study Areas

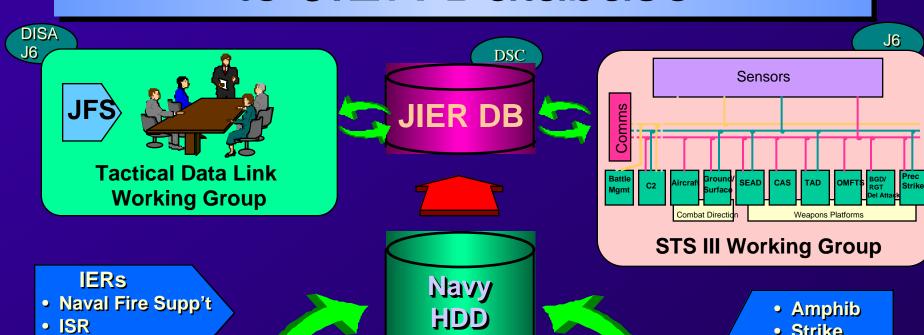
Joint Suppression of Enemy Air Defense

Joint Close Air Support Joint Ops Maneuver From The Sea

Joint Precision Strike Joint Brigade Deliberate Attack

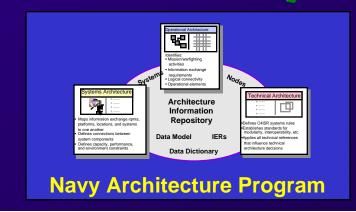
Joint Small Unit Reach Back Joint Theater Air Defense

## Navy Architectures Contribute to JIER Database





MIW



- Strike
- Undersea

**IERs** 

- Air Surface
- C2/IW
- MIW
- TAD

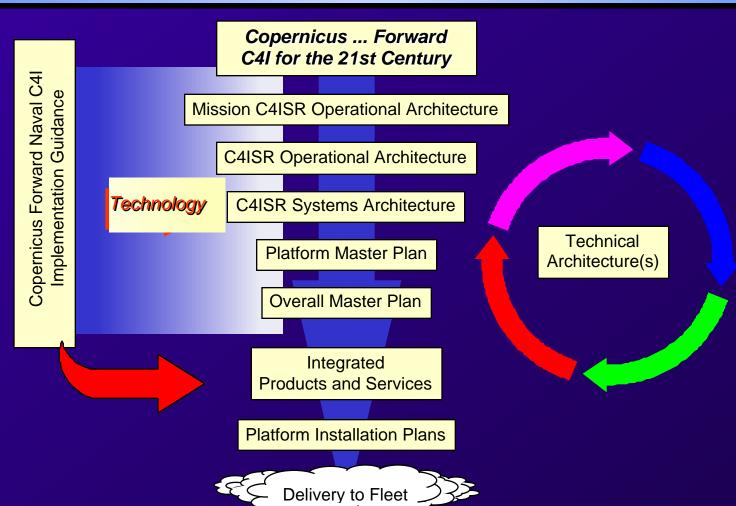
## Background

- U.S. Navy initiated study recognizing joint interoperability problems between themselves as well as other services in a Joint littoral environment
- J6 (Cebrowski) tasker to J6I (Celeste) (31 Jan 96):
  - Integrate Navy architectures to STS III
  - Develop a Joint IER database to support analysis
- ASD(C3I) was briefed and supports STS III. Recommends:
  - Including service support
  - Assisting CISA architecture projects
  - Supporting J6/DISA JIEO Joint Tactical Data Link
     Management Plan project
- Navy is a funding partner (N6C/N62 @ \$300K each )

### Common Architectural Goals

- Provide framework for acquisition of interoperable systems
- Define information exchanges across OPFACs, platforms, systems using standard data
- Improve information integrity
- Provide information to "Neck down" and consolidate systems
- Standardize terminology across warfighting and engineering communities
- Provide roadmap for systems evolution and technology insertion

# SPAWAR Systems Engineering Process

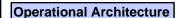


## Navy Architecture Strategy

- Use Naval and Joint policy (align with C4ISR ITF)
- Align with customers (warfighter/acquisition officers)
  - Solicit key customer contacts
  - Understand customer needs
  - Involve customer in architecture development
- Integrate with key DoD processes:
  - JSPS, PPBS, acquisition
- Plan top down, execute bottom-up
  - Integrate into Naval multi-warfare architecture and Joint mission architectures
  - Develop multi-mission HDD, IERs, node list, etc.

## DoD Architecture Components







#### Identifies:

- Mission/warfighting activities
- Information exchange requirements
- Logical connectivity
- Operational elements

## Architecture Information Repository

**Data Model** 

**IERs** 

**Data Dictionary** 

## Nodes

### **Technical Architecture**



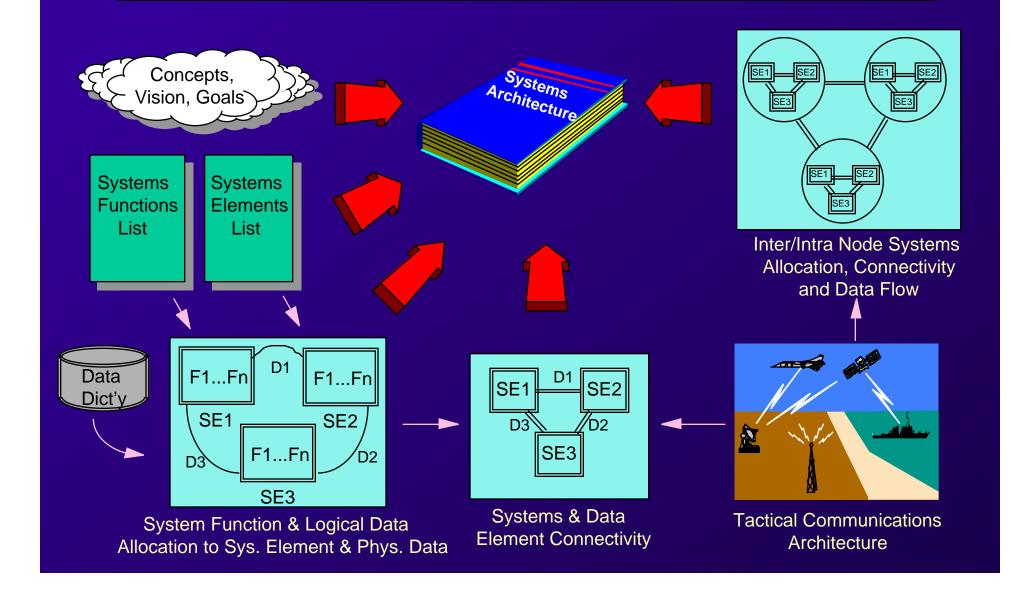
- Defines C4ISR systems rules
- Establishes standards for modularity, interoperability, etc.
- Applies all technical references that influence technical architecture decisions

### Systems Architecture

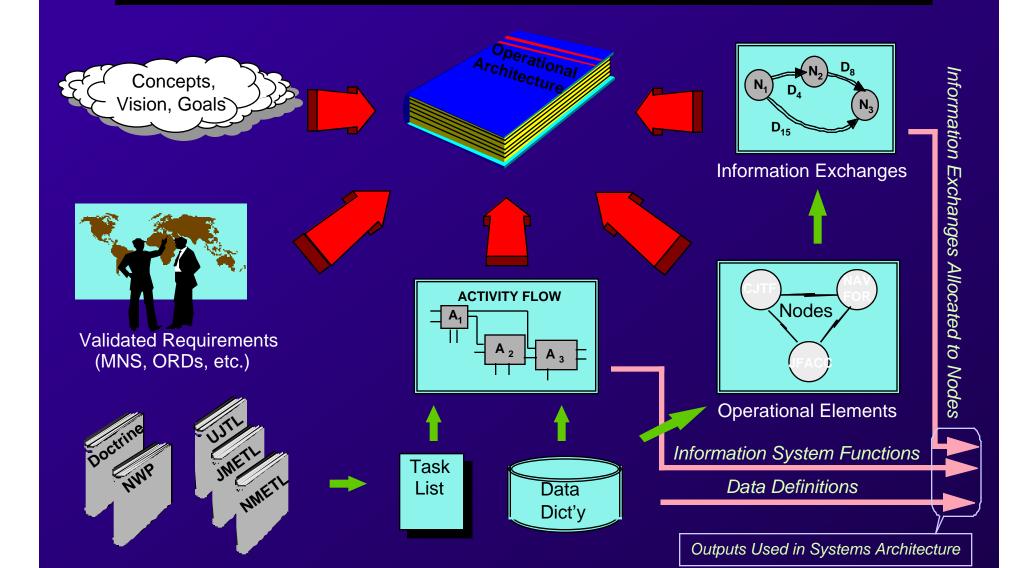


- Maps information exchange rqmts, platforms, locations, and systems to one another
- Defines connections between system components
- Defines capacity, performance, and environment constraints

## Systems Architectures

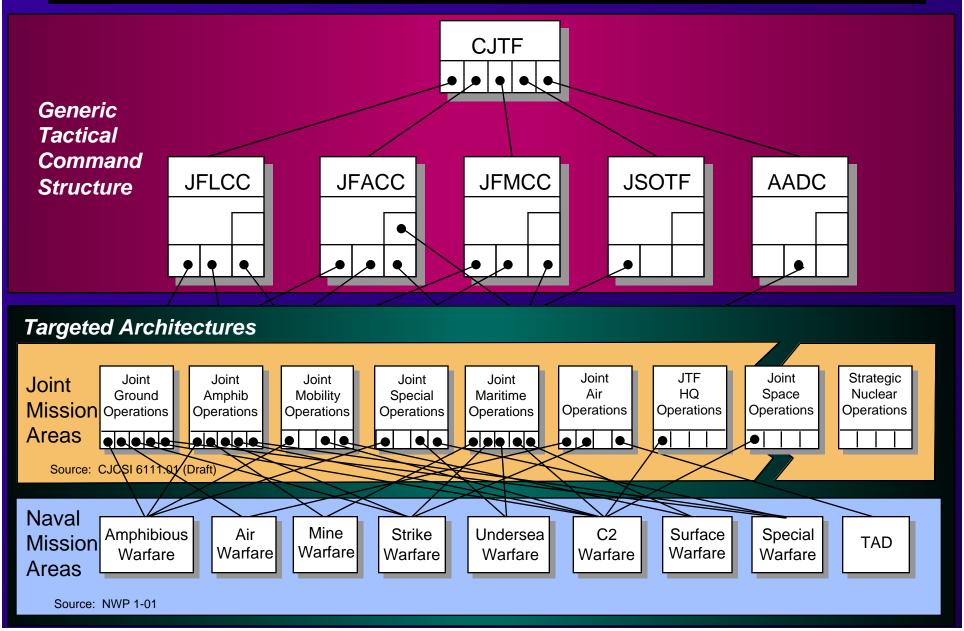


## Operational Architectures

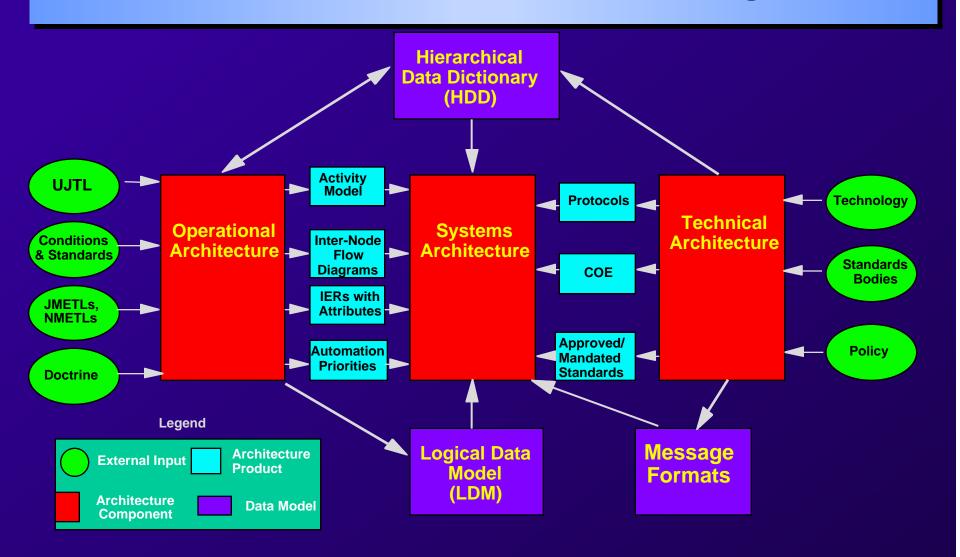


## Architectural Relationships (Tactical)

Representative Mappings



## Data Ties Architecture Together



## 1995 - 2000 Schedule

